

Claims

[c1] What is claimed is:

1.A method for receiving public broadcast services with a wireless device compatible with the Global System for Mobile communications (GSM) protocol, the method comprising:

performing a radio frequency (RF) scan on all frequencies in at least one predetermined frequency band to identify all possible Broadcast Control Channels (BCCHs);

measuring Received Signal Strength Indicator (RSSI) levels for each BCCH, and sorting the BCCHs according to the corresponding RSSI levels;

the wireless device selecting a BCCH having a strongest average RSSI level;

the wireless device camping on a cell corresponding to the selected BCCH; and

the wireless device receiving GSM public broadcast services from a mobile phone network operating the selected BCCH irrespective of whether the wireless device subscribes to the mobile phone network.

[c2] 2.The method of claim 1 wherein if the wireless device is a multi-band device capable of receiving signals in a

plurality of frequency bands, the wireless device scans all frequencies in each of the plurality of frequency bands for identifying all possible BCCHs.

- [c3] 3.The method of claim 1 wherein the wireless device comprises a nonvolatile memory, and the wireless device performs the RF scan on all frequencies in at least one predetermined frequency band if no BCCH RSSI level information is already stored in the nonvolatile memory.
- [c4] 4.The method of claim 3 wherein if BCCH RSSI level information is already stored in the nonvolatile memory, the wireless device loads the BCCH RSSI level information and selects a BCCH having a strongest average RSSI level.
- [c5] 5.The method of claim 3 wherein after measuring the RSSI levels for each BCCH and sorting the BCCHs according to the corresponding RSSI levels, the wireless device stores a list of the sorted BCCHs and the corresponding RSSI levels in the nonvolatile memory.
- [c6] 6.The method of claim 5 wherein the wireless device is capable of updating the list of the sorted BCCHs and the corresponding RSSI levels in the nonvolatile memory if the average RSSI level of the selected BCCH changes by more than a threshold value while the wireless device is camping on the cell corresponding to the selected BCCH.

- [c7] 7.The method of claim 1 wherein after the wireless device selects the BCCH having the strongest average RSSI level, the wireless device continues to monitor a subset of the identified BCCHs having a highest average RSSI level to ensure that the wireless device always selects the BCCH with the strongest average RSSI level.
- [c8] 8.The method of claim 1 wherein the wireless device is capable of camping on multiple BCCHs simultaneously if the multiple BCCHs each belong to different Mobile Country Codes (MCCs) and/or Mobile Network Codes (MNCs).
- [c9] 9.The method of claim 1 wherein the GSM public broadcast services include Short Message Service (SMS) messages sent to wireless devices by mobile phone networks.
- [c10] 10.A method for receiving GSM public broadcast services with a mobile station compatible with the Global System for Mobile communications (GSM) protocol, the method comprising:
searching for a Subscriber Identity Module (SIM) card in the mobile station;
determining that the mobile station does not contain a SIM card or that the mobile station contains a SIM card

that cannot provide local telephone service;
performing a radio frequency (RF) scan on all frequencies in at least one predetermined frequency band to identify all possible Broadcast Control Channels (BCCHs);
measuring Received Signal Strength Indicator (RSSI) levels for each BCCH, and sorting the BCCHs according to the corresponding RSSI levels;
the mobile station selecting a BCCH having a strongest average RSSI level;
the mobile station camping on a cell corresponding to the selected BCCH; and
the mobile station receiving GSM public broadcast services from a mobile phone network operating the selected BCCH irrespective of whether the mobile station subscribes to the mobile phone network.

[c11] 11.The method of claim 10 wherein if the mobile station is a multi-band device capable of receiving signals in a plurality of frequency bands, the mobile station scans all frequencies in each of the plurality of frequency bands for identifying all possible BCCHs.

[c12] 12.The method of claim 10 wherein the mobile station comprises a nonvolatile memory, and the mobile station performs the RF scan on all frequencies in at least one predetermined frequency band if no BCCH RSSI level information is already stored in the nonvolatile memory.

- [c13] 13.The method of claim 12 wherein if BCCH RSSI level information is already stored in the nonvolatile memory, the mobile station loads the BCCH RSSI level information and selects a BCCH having a strongest average RSSI level.
- [c14] 14.The method of claim 12 wherein after measuring the RSSI levels for each BCCH and sorting the BCCHs according to the corresponding RSSI levels, the mobile station stores a list of the sorted BCCHs and the corresponding RSSI levels in the nonvolatile memory.
- [c15] 15.The method of claim 14 wherein the mobile station is capable of updating the list of the sorted BCCHs and the corresponding RSSI levels in the nonvolatile memory if the average RSSI level of the selected BCCH changes by more than a threshold value while the mobile station is camping on the cell corresponding to the selected BCCH.
- [c16] 16.The method of claim 10 wherein after the mobile station selects the BCCH having the strongest average RSSI level, the mobile station continues to monitor a subset of the identified BCCHs having a highest average RSSI level to ensure that the mobile station always selects the BCCH with the strongest average RSSI level.
- [c17] 17.The method of claim 10 wherein the mobile station is capable of camping on multiple BCCHs simultaneously if

the multiple BCCHs each belong to different Mobile Country Codes (MCCs) and/or Mobile Network Codes (MNCs).

[c18] 18.The method of claim 10 wherein the mobile station is in Discontinuous Reception (DRX) mode, the mobile station is capable of receiving the GSM public broadcast services.

[c19] 19.The method of claim 10 wherein the GSM public broadcast services include Short Message Service (SMS) messages sent to mobile stations by mobile phone networks.